REMARKS

Claims 2, 12 and 21-31, as amended, remain herein. Claim 24 has been amended. Support for the amendments may be found throughout the specification and in the original claims (see, e.g., page 13, lines 23-30 of the specification).

1. Claim 24 was rejected under 35 U.S.C. § 112, second paragraph. Claim 24 has been amended to moot this rejection. Claim 24 recites the increase in the amount of resin material flowing into the product cavity when the ultrasonic vibration is applied compared to when the ultrasonic vibration is not applied.

2. Claims 2 and 22-29 were rejected under 35 U.S.C. § 103(a) over Nishimoto U.S. Patent Application Publication 2002/0036360 in view of Sato et al. JP 11-262938.

Claim 2 recites a molding method using ultrasonic vibration in which a resin material in a molten state is injected from an injection apparatus, filled into a cavity of a first mold, and cooled down to mold a product in a predetermined shape, the method comprising: providing a first mold comprising a fixed mold and a movable mold and having a plurality of product cavities to mold products, a runner by which the product cavities are connected to each other, and a resin pit located at a halfway part of the runner, wherein the movable mold comprises a through-hole which communicates with the resin pit and which is formed in the same direction as a forward/backward moving direction of the movable mold; providing a vibrator attached to an ultrasonic oscillator and inserting a tip of the vibrator into the through-hole such that the tip of the vibrator forms a bottom of the resin pit; injecting the resin material into the resin pit and

thereby filling all of the plurality of product cavities; and applying ultrasonic vibration to the resin material in the resin pit at a predetermined time.

The Office Action admits that Nishimoto does not disclose a vibrator inserted in a through-hole which communicates with a resin pit, wherein a tip of a vibrator forms a bottom of a resin pit. However, the Office Action alleges that Sato discloses a vibrator inserted in a through-hole which communicates with a cavity 4 and that a tip of the vibrator forms a bottom of cavity 4.

Neither Nishimoto nor Sato discloses all elements of applicants' claim 2. Sato discloses injection molding wherein the whole or part of the mold is resonating. However, Sato says nothing about applying ultrasonic vibration to the resin material in the resin pit, i.e., to a specific section of the flowing path of the resin material, towards the cavity through a sprue and the runner. The resin pit is provided at a halfway part of the runner in the claimed invention, thereby concentrating ultrasonic vibration to the resin material in the resin pit. As a result, a "pumping effect" is achieved, and the resin material in the resin pit is heated, melts, and caused to flow into the product cavity, thereby the amount of the resin material flowing into the product cavity can be increased.

Sato's cavity 4 is distinct from applicants' claimed resin pit which is located at a halfway part of applicants' claimed runner which connects the product cavities. Thus, applicants' claimed resin pit is distinct from the product cavity. Sato discloses applying ultrasonic vibration directly to the product cavity. Such configuration, unlike applicants' claimed invention does not cause an increase of the flow towards the product cavity.

Applicants' molding method is not obvious but achieves superior molding accuracy and quality. Applicants' specification explains that:

> A second aspect of the present invention is directed to a molding method using ultrasonic vibration in which a resin material in a molten state is filled into a cavity of a mold and cooled down to mold a product in a predetermined shape, the method comprising preparing the mold having a plurality of product cavities to mold the products, a runner by which the product cavities are connected to each other, and a resin pit provided at a halfway part of the runner; supplying the resin material to the resin pit and filling the resin material into all of the plurality of product cavities; and applying the ultrasonic vibration to the resin material in the resin pit at predetermined timing.
>
> According to these methods of the present invention, the ultrasonic vibration is applied to the resin material in the dummy cavity or the resin pit so that the resin material in the dummy cavity or the resin pit may be heated and molten and a pumping effect may work to pressurize the resin material in the product cavity, and it is thus speculated that the strain of the product (product such as an optical lens) molded in the product cavity is reduced and the transferability is improved.

Applicants' specification, page 4, line 22 to page 5, line 14. Evidence rebutting an obviousness rejection includes evidence that the claimed invention yields unexpectedly improved properties or properties not present in the prior art. In re Dillon, 919 F.2d 688, 692-93 (Fed. Cir. 1990); MPEP § 2145.

Even if Nishimoto and Sato were combined, neither Nishimoto nor Sato discloses applying ultrasonic vibration to the resin material in the resin pit. Instead, the combination would teach applying the ultrasonic vibration to the product cavity itself. As disclosed in applicants' specification, such configuration is effective to reduce internal strain and to improve the transferability. However, these effects are insufficient when optical lenses with higher accuracy are molded. Applicants' specification, page 3, lines 2-20.

Thus, neither Nishimoto nor Sato teaches or suggests applicants' claimed invention. Nishimoto and Sato disclose nothing that would have suggested applicants' claimed invention to

one of ordinary skill in the art. There is no disclosure or teaching in Nishimoto, Sato, or otherwise in this record, that would have suggested the desirability of modifying or combining any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Applicants respectfully request reconsideration and withdrawal of this rejection.

4. Claims 12, 21 and 30-31 were rejected under 35 U.S.C. § 103(a) over Nishimoto in view of Sato.

Claim 12 recites a molding machine for injecting a resin material from an injection apparatus into a cavity formed in a first mold and for compressing the resin material to mold a product in a predetermined shape, the molding machine comprising: a first mold comprising a fixed mold and a movable mold and having a plurality of product cavities for molding products, wherein the movable mold comprises a through-hole which communicates with the resin pit and which is formed in the same direction as a forward/backward moving direction of the movable mold; a runner connecting the product cavities to each other; a resin pit located at a halfway part of the runner; an injection apparatus for injecting a resin material into said resin pit, thereby filling the plurality of product cavities with resin via said runner; and an ultrasonic oscillator for applying ultrasonic vibration to resin material in the resin pit, wherein a vibrator attached to the ultrasonic oscillator, is inserted into the through-hole such that a tip of the vibrator forms a bottom of the resin pit.

As discussed above, neither Nishimoto nor Sato teaches or suggests applicants' claimed invention, and neither Nishimoto nor Sato discloses applicants' claimed vibrator inserted into a through-hole which communicates with the resin pit, wherein a tip of the vibrator forms a bottom

of the resin pit. As explained above, applicants' molding machine is not obvious but achieves superior molding accuracy and quality.

Thus, neither Nishimoto nor Sato teaches or suggests applicants' claimed invention. Nishimoto and Sato disclose nothing that would have suggested applicants' claimed invention to one of ordinary skill in the art. There is no disclosure or teaching in Nishimoto, Sato, or otherwise in this record, that would have suggested the desirability of modifying or combining any portions thereof effectively to anticipate or suggest applicants' presently claimed invention. Applicants respectfully request reconsideration and withdrawal of this rejection.

Accordingly, all claims are now fully in condition for allowance and a notice to that effect is respectfully requested. The PTO is hereby authorized to charge/credit any fee deficiencies or overpayments to Deposit Account No. 19-4293. If further amendments would place this application in even better condition for issue, the Examiner is invited to call applicants' undersigned attorney at the number listed below.

Respectfully submitted,

STEPTOE & JOHNSON LLP

Date: October 7, 2010

Houda MORAD

Roger W. Parkhurst
Reg. No. 25,177
Houda Morad
Reg. No. 56,742

STEPTOE & JOHNSON LLP
1330 Connecticut Avenue, N.W.
Washington, D.C. 20036-1795
Tel: (202) 429-3000
Fax: (202) 429-3902